

WHAT IS CLAIMED IS:

1. A communication device comprising:

a padding unit which adds data to an asynchronous packet to form an integer multiple of a block length;

5 an encryption unit which encrypts the asynchronous packet added by the padding unit and a synchronous packet; and

a transmitting unit which transmits the added asynchronous packet and the synchronous packet  
10 encrypted by the encryption unit.

2. A communication device according to claim 1, further comprising:

a data length information adder which adds data length information on the length of the real data of  
15 the asynchronous packet to the encrypted added asynchronous packet.

3. A communication device according to claim 1, further comprising:

a key management unit which rewrites the key  
20 information used for encryption by the encryption unit, based on key rewrite information, and adds the key rewrite information to the encrypted added asynchronous packet.

4. A communication device according to claim 1,  
25 further comprising:

a copy control information adder which adds copy control information which limits the number of times

the asynchronous packet is copied, to the encrypted added asynchronous packet.

5. A communication device according to claim 1, further comprising:

5           an adder which inserts, between the encrypted added asynchronous packets, selected one of control information including data length information on a length of real data of the asynchronous packet, key rewrite information which rewrites key information used  
10           for encryption by the encryption unit and copy control information for limiting the number of times the asynchronous packet is copied.

6. A communication device according to claim 1, further comprising:

15           a receiving unit which receives the encrypted added asynchronous packet transmitted from the transmitting unit;

            a decryption unit which decrypts the encrypted added asynchronous packet received by the receiving  
20           unit and outputs the added asynchronous packet; and

            an extraction unit which extracts real data, except for the data added by the padding unit, from the added asynchronous packet output from the decryption unit.

25           7. A communication device according to claim 6, wherein the extraction unit detects data length information on a length of the real data of the

asynchronous packet and based on the detected data length information, extracts the real data except for the added data, from the added asynchronous packet output from the decryption unit.

5           8. A communication device according to claim 6, wherein the decryption unit detects key rewrite information which rewrites key information used for encryption by the encryption unit and, based on the latest key information rewritten by the key rewrite  
10           information, decrypts the encrypted added asynchronous packet received by the receiving unit.

9. A communication device according to claim 6, further comprising:

15           a copy function which detects copy control information for limiting the number of times the asynchronous packet received by the receiving unit is copied and copies at least the asynchronous packet within the limit.

20           10. A communication device according to claim 6, wherein the receiving unit receives selected one of control information including the data length information on a length of the real data of the asynchronous packet, key rewrite information which rewrites key information used for encryption by the  
25           encryption unit and copy control information for limiting the number of times the asynchronous packet is copied.

11. A communication method comprising:

adding data to the asynchronous packet to form  
an integer multiple of a block length;

5 encrypting the added asynchronous packet and the  
synchronous packet; and

transmitting the encrypted added asynchronous  
packet and the encrypted synchronous packet.

12. A communication method according to claim 11,  
further comprising:

10 adding data length information on the length of  
the real data of the asynchronous packet to the  
encrypted added asynchronous packet.

13. A communication method according to claim 11,  
further comprising:

15 rewriting the key information used for encryption  
based on key rewrite information, and adding the key  
rewrite information to the encrypted added asynchronous  
packet.

20 14. A communication method according to claim 11,  
further comprising:

adding copy control information for limiting the  
number of times the asynchronous packet is copied, to  
the encrypted added asynchronous packet.

25 15. A communication method according to claim 11,  
further comprising:

inserting, between the encrypted added  
asynchronous packets, one of the control information

including data length information on a length of  
real data of the asynchronous packet, key rewrite  
information which rewrites key information used for  
encryption, and the copy control information for  
5 limiting the number of times the asynchronous packet is  
copied.

16. A communication method according to claim 11,  
further comprising:

receiving the encrypted added asynchronous packet  
10 transmitted;

decrypting the encrypted added asynchronous packet  
and outputs the added asynchronous packet; and

extracting real data except for the added data  
from the added asynchronous packet.

15 17. A communication method according to claim 16,  
wherein data length information on a length of the real  
data of the asynchronous packet is detected and, based  
on the detected data length information, the real data  
except for the added data is extracted from the  
20 decrypted added asynchronous packet.

18. A communication method according to claim 16,  
further comprising:

detecting key rewrite information which rewrites  
key information used for encryption is detected, and  
25 based on the latest key information rewritten by the  
detected key rewrite information, the encrypted added  
asynchronous packet received is decrypted.

19. A communication method according to claim 16,  
further comprising:

5 detecting copy control information for limiting  
the number of times the asynchronous packet is copied,  
and copying at least the asynchronous packet within the  
limit.

10 20. A communication method according to claim 16,  
wherein one of the control information including the  
data length information on a length of the real data of  
the asynchronous packet, key rewrite information which  
rewrites key information used for encryption and copy  
control information for limiting the number of times  
the asynchronous packet is copied, is received as  
an exclusive control information packet.